The effects of Re on the temporal evolution of a Ni-Cr-Al-Re alloy

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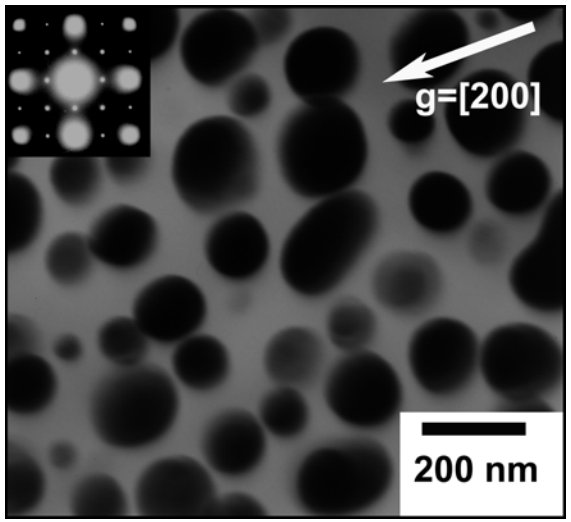
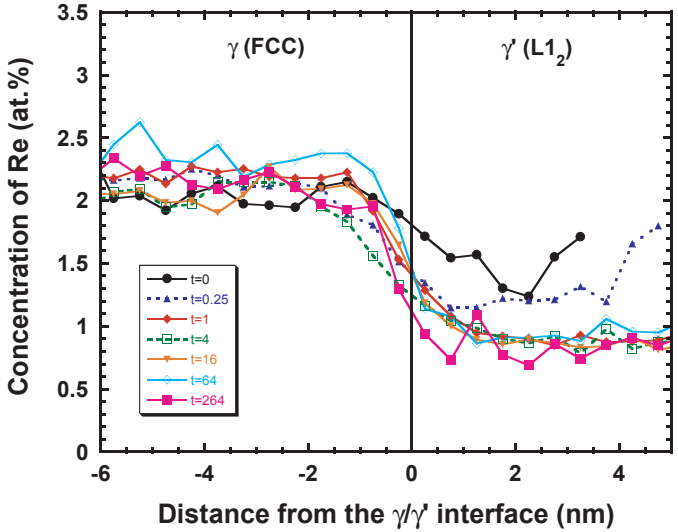
1



1 Dark-field TEM micrograph of a Ni-Cr-Al-Re alloy aged for 264 h, taken along the [100] zone axis.

- **Third generation Ni-based superalloy containing Re**
- **Material broadly used for turbine engine blade**
- **High corrosion and creep resistance at elevated temperatures**
- **Subnanometer scale chemical study is performed using three-dimensional atom probe (3DAP) microscopy.**
- **Coarsening kinetics of γ′-precipitates is investigated employing TEM.**
- **Addition of Re in Ni-Cr-Al alloy delays the coarsening of the precipitates and stabilizes the spheroidal morphology.**
- **No Re interfacial segregation was observed at the γ/γ′ interfaces.**

2



2 Series of Re proxigrams displaying the temporal evolution of Re. Contrary to the result for a commercial Ni-based superalloy, René N6, there is no significant Re interfacial segregation at the γ/γ′ interface.